Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date	**1/4/2011**
State:	**PA**
County:	**Susquehanna**
API Number:	**37-115-20228**
Operator Name:	**Chief Oil & Gas**
Well Name and Number:	**Tell Unit 2H**
Longitude:	**-75.8847**
Latitude:	**41.714661**
Long/Lat Projection:	**NAD83**
Production Type:	**Gas**
True Vertical Depth (TVD):	**7,293**
Total Water Volume (gal)*:	**4,873,932**

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
(Plexslick 921)	Pumpco	Friction Reducer	Petroleum Distillate	64742-47-8	20.0 - 30.0%	0.10560%	
(Plexcide 24L)	Pumpco	Biocide	Tetrahydro-3, 5-Dimethyl-2H-1,3,5-thisdiazine-2-thione	533-74-4	24.00%	0.02520%	
			Sodium Hydroxide	1310-73-2			
(Greenhib 677)	Pumpco	Scale Inhibitor	Salt of phosphono-methylated diamine	n/a	25.00%	0.07570%	
(Plexaid OS-30)	Pumpco	Oxygen Scavengar	Ammonium Bisulfite	010192-30-0	45.0 - 55.0%	0.01200%	
Sand (Proppant)	Pumpco	Propping Agent	Crystalline Silica	14808-60-7	99.90%	11.40580%	
Water	Provided by Customer	Base Fluid	Water		100.00%	88.37570%	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.